

## Gove County

### Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors

5/24/2016

Using the most recent IMPLAN data available (2014) adjusted for 2016, 11 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Gove County economy.<sup>1</sup>

These 11 sectors have a total direct output of approximately **\$174 million** and support **538 jobs** in Gove County. Running the model for all 11 sectors simultaneously produces the following results:

Agriculture, Food, and Food Processing Sector Contribution to Overall Gove County Economy						
Impact Type <sup>2</sup>	Employment	% Employment	Total Value Added <sup>3</sup>	Total Value Added % of Gross Regional Product <sup>4</sup>	Output <sup>5</sup>	Output % of Gross Regional Product
Direct Effect	538.0	22.98%	\$72,125,951.35	44.27%	\$173,964,645.58	106.78%
Indirect Effect	129.2	5.52%	\$7,469,601.08	4.58%	\$13,237,962.91	8.13%
Induced Effect	81.9	3.50%	\$4,913,801.74	3.02%	\$9,134,474.67	5.61%
<b>Total Effect</b>	<b>749.2</b>	<b>32.00%</b>	<b>\$84,509,354.17</b>	<b>51.87%</b>	<b>\$196,337,083.16</b>	<b>120.51%</b>

As shown in the above table, agriculture, food, and food processing sectors support **749.2 jobs**, or **32%** of the entire workforce in the county. These sectors provide a total economic contribution of approximately **\$196.3 million**, roughly **120.51% of the economy**.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 11 agriculture, food, and food processing sectors is approximately **\$84.5 million**, or **51.87% of the GRP**. This indicates that personal income, business income, and taxes generated by these sectors account for **51.87% of the total economy**.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

<sup>1</sup> Article on building a contribution analysis in IMPLAN that avoids double counting:

[http://www.implan.com/index.php?option=com\\_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70](http://www.implan.com/index.php?option=com_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70)

<sup>2</sup> Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

<sup>3</sup> Value added = labor income + indirect business taxes + other property type income.

<sup>4</sup> GRP = final demand of households + governments expenditures + capital + exports - imports - institutional sales.

<sup>5</sup> Output = intermediate inputs + value added.

In the top ten agriculture, food, and food processing sectors by employment, the beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming sector is the top employer with **431.1 employees**. This table also shows the amount of jobs that are created by the agriculture industry in Gove County.

Top Ten Sectors by Employment		
Sector	Total Employment	Total Output
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	431.1	\$113,960,014.10
Grain farming	65.8	\$49,016,588.01
Support activities for agriculture and forestry	64.9	\$3,976,327.32
Wholesale trade	22.2	\$3,991,122.38
All other crop farming	21.1	\$3,348,677.51
Monetary authorities and depository credit intermediation	12.9	\$1,959,582.42
Truck transportation	10.7	\$1,829,587.19
Limited-service restaurants	8.5	\$524,114.08
Personal care services	6.7	\$106,035.48
Securities and commodity contracts intermediation and brokerage	6.3	\$544,280.27

The beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming sector directly contributes approximately **\$114 million** to the Gove County economy. The table below also shows the amount of revenue that is generated in other industries by having a strong agriculture industry..

Top Ten Sectors by Output		
Sector	Total Employment	Total Output
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	431.1	\$113,960,014.10
Grain farming	65.8	\$49,016,588.01
Wholesale trade	22.2	\$3,991,122.38
Support activities for agriculture and forestry	64.9	\$3,976,327.32
All other crop farming	21.1	\$3,348,677.51
Animal, except poultry, slaughtering	5.5	\$3,303,188.40
Owner-occupied dwellings	0.0	\$2,743,378.10
Dairy cattle and milk production	6.0	\$2,002,534.15
Monetary authorities and depository credit intermediation	12.9	\$1,959,582.42
Truck transportation	10.7	\$1,829,587.19

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture, food, and food processing sector and the output they contributed to the Gove County economy.

<b>All Agriculture, Food, and Food Processing Sectors</b>		
<b>Sector</b>	<b>Total Employment</b>	<b>Total Output</b>
Oilseed farming	0.6	\$1,556,243.83
Grain farming	65.8	\$49,016,588.01
Greenhouse, nursery, and floriculture production	1.7	\$207,909.50
All other crop farming	21.1	\$3,348,677.51
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	431.1	\$113,960,014.10
Dairy cattle and milk production	6.0	\$2,002,534.15
Poultry and egg production	0.0	\$21,734.59
Animal production, except cattle and poultry and eggs	0.9	\$155,899.91
Animal, except poultry, slaughtering	5.5	\$3,303,188.40
Bread and bakery product, except frozen, manufacturing	0.8	\$100,855.73
Veterinary services	4.5	\$290,999.85

All 105 counties in Kansas have an IMPLAN model and an agriculture, food, and food processing contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Gove County, the retail sector was omitted.

## \*\*Calculations Including Ethanol Production\*\*

### Estimated Impact of Agriculture, Food, Food Processing and Ethanol Production on Gove County Economy

In 2014, Gove County produced **45 million gallons** of ethanol worth an estimated **\$105.3 million** dollars. The impact on page one includes by-products from ethanol plants such as distiller's dried grain with solubles (DDGS), but do not account for the economic activity generated by ethanol fuel production. Namely, this is because ethanol fuel production is included in sector 165, other basic organic chemical manufacturing, which encompasses more than ethanol production and was not modeled in the original scenario. Therefore, utilizing the full sector value would inflate the results. If we were to include sector 165 in the analysis with a direct value of \$105.3 million, the total contribution to agriculture increases to **\$312.7 million**, represents **58.77% of the jobs**, and increases total value added to **\$95.8 million** in Gove County.

Agriculture, Food, Food Processing, and Ethanol Sector Contribution to Overall Gove County Economy						
Impact Type <sup>2</sup>	Employment	% Employment	Total Value Added <sup>3</sup>	Total Value Added % of Gross Regional Product <sup>4</sup>	Output <sup>5</sup>	Output % of Gross Regional Product
<b>Direct Effect</b>	586.4	25.05%	78,737,904.1	48.33%	279,264,646.4	171.41%
<b>Indirect Effect</b>	201.0	8.59%	11,329,247.5	6.95%	22,896,094.6	14.05%
<b>Induced Effect</b>	94.9	4.05%	5,687,367.0	3.49%	10,573,877.5	6.49%
<b>Total Effect</b>	882.3	37.69%	95,754,518.6	58.77%	312,734,618.6	191.96%

10 Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

11 Value added = labor income + indirect business taxes + other property type income.

12 GRP = final demand of households + governments expenditures + capital + exports - imports - institutional sales.

13 Output = intermediate inputs + value added.